LISTING OF CLAIMS

1. (Currently amended) A golf ball comprising:

a core having an outer diameter no greater than about 1.62 inches; and

a cover layer comprising a curing agent and a polyurethane/urea hybrid prepolymer formed from a polyisocyanate and a monodisperse heterotelechelic polymer having a polydispersity of from about 1.0 to about 1.3, and having the formula:

$$T—Z—Q_n—C—Y—W$$

where:

C is a hydrogenated or unsaturated block derived by anionic polymerization of at least one monomer selected from the group consisting of conjugated dienes, alkenyl-substituted aromatic hydrocarbons, and mixtures thereof;

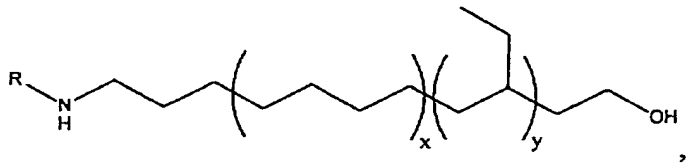
Y and **Z** are independently branched or straight chain hydrocarbon connecting groups which contains 3-25 carbon atoms optionally substituted with aryl or substituted aryl containing lower alkyl, lower alkylthio, or lower dialkylamino groups;

Q is an unsaturated or hydrogenated hydrocarbyl group derived by incorporation of at least one compound selected from the group consisting of conjugated diene hydrocarbons, alkenyl-substituted aromatic hydrocarbons, and mixtures thereof;

T and **W** are different and are selected from either ~~oxygen or nitrogen~~ oxygen-containing or nitrogen-containing; and

n is an integer from 0 to 5.

2. (Original) The golf ball of claim 1, wherein the monodisperse heterotelechelic polymer comprises



where **R** = H, alkyl, or aryl and **x** and **y** = integer from 1 to 50.

3. (Original) The golf ball of claim 1, wherein the core comprises a polybutadiene composition and the salt of a halogenated thiophenol.

4. (Original) The golf ball of claim 3, wherein the salt of a halogenated thiophenol comprises zinc salt of pentachlorothiophenol.

5. (Original) The golf ball of claim 1, wherein the polyisocyanate comprises toluene diisocyanate; 4,4'-diphenylmethane diisocyanate; polymeric 4,4'-diphenylmethane diisocyanate; carbodiimide-modified 4,4'-diphenylmethane diisocyanate; 3,3'-dimethyldiphenyl-4,4' diisocyanate; naphthalene diisocyanate; *p*-phenylene diisocyanate; xylene diisocyanate; *p*-tetramethylxylene diisocyanate; *m*-tetramethylxylene diisocyanate; ethylene diisocyanate; propylene-1,2-diisocyanate; tetramethylene-1,4-diisocyanate; cyclohexyl diisocyanate; 1,6-hexamethylene-diisocyanate; dodecane-1,12-diisocyanate; cyclobutane-1,3-diisocyanate; cyclohexane-1,3-diisocyanate; cyclohexane-1,4-diisocyanate; 1-isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane; isophorone diisocyanate; methyl cyclohexylene diisocyanate; triisocyanate of 1,6-hexamethylene-diisocyanate; triisocyanate of 2,2,4-trimethyl-1,6-hexane diisocyanate; triisocyanate of 2,4,4-trimethyl-1,6-hexane diisocyanate; 4,4'-dicyclohexylmethane diisocyanate; or trimethylhexamethylene diisocyanate.

6. (Original) The golf ball of claim 1, wherein the monodisperse heterotelechelic polymer has a polydispersity of from about 1.0 to about 1.1.

7. (Original) The golf ball of claim 1, wherein the cover has a thickness of less than about 0.05 inches and the core has a compression of between about 50 and about 90.

8. (Original) The golf ball of claim 1, wherein the core outer diameter is between about 1.54 inches and about 1.62 inches.

9. (Original) The golf ball of claim 1, wherein the golf ball has a coefficient of restitution of greater than about 0.8.

10. (Original) The golf ball of claim 1, wherein the golf ball has a coefficient of restitution of greater than about 0.81.

11. (Original) The golf ball of claim 1, wherein the core comprises a center and an outer core layer.

12. (Currently amended) A golf ball comprising:

a core;

an intermediate layer; and

a cover comprising a curing agent and a polyurethane/urea hybrid prepolymer formed from a polyisocyanate and a monodisperse heterotelechelic polymer having a polydispersity of between about 1.0 and about 1.3, and having the formula:

$$T—Z—Q_n—C—Y—W$$

where:

C is a hydrogenated or unsaturated block derived by anionic polymerization of at least one monomer selected from the group consisting of conjugated dienes, alkenyl-substituted aromatic hydrocarbons, and mixtures thereof;

Y and **Z** are independently branched or straight chain hydrocarbon connecting groups which contains 3-25 carbon atoms optionally substituted with aryl or substituted aryl containing lower alkyl, lower alkylthio, or lower dialkylamino groups;

Q is an unsaturated or hydrogenated hydrocarbyl group derived by incorporation of at least one compound selected from the group consisting of conjugated diene hydrocarbons, alkenyl-substituted aromatic hydrocarbons, and mixtures thereof;

T and **W** are different and are selected from either ~~oxygen or nitrogen~~ oxygen-containing or nitrogen-containing; and

n is an integer from 0 to 5.

13. (Original) The golf ball of claim 12, wherein the intermediate layer is an inner cover layer, an outer core layer, or a water vapor barrier layer.

14. (Original) The golf ball of claim 12, wherein the intermediate layer is an inner cover layer, and the inner cover layer and the cover each have a thickness of less than about 0.05 inches.

15. (Original) The golf ball of claim 12, wherein the intermediate layer comprises the monodisperse heterotelechelic polymer, a monodisperse telechelic polyurethane, or a monodisperse telechelic polyurea.

16. (Original) The golf ball of claim 12, wherein the intermediate layer comprises ionomers, vinyl resins; polyolefins; polyurethanes; polyureas; polyamides; acrylic resins; thermoplastics; polyphenylene oxides; thermoplastic polyesters; thermoplastic rubbers; or highly-neutralized polymers.

17. (Original) The golf ball of claim 12, wherein the monodisperse telechelic polyol has a polydispersity of from about 1.0 to about 1.1.

18. (Currently amended) A golf ball comprising:

a core;

an intermediate layer; and

a cover comprising a curing agent and a ~~polyurethane~~ polyurethane/urea hybrid prepolymer formed from a polyisocyanate and a monodisperse heterotelechelic polymer having a polydispersity of between about 1.0 and about 1.3 and having the formula:

$$T—Z—Q_n—C—Y—W$$

where:

C is a hydrogenated or unsaturated block derived by anionic polymerization of at least one monomer selected from the group consisting of conjugated dienes, alkenyl-substituted aromatic hydrocarbons, and mixtures thereof;

Y and **Z** are independently branched or straight chain hydrocarbon connecting groups which contains 3-25 carbon atoms optionally substituted with aryl or substituted aryl containing lower alkyl, lower alkylthio, or lower dialkylamino groups;

Q is an unsaturated or hydrogenated hydrocarbyl group derived by incorporation of at least one compound selected from the group consisting of conjugated diene hydrocarbons, alkenyl-substituted aromatic hydrocarbons, and mixtures thereof;

T and W are different and are selected from either oxygen-containing or nitrogen-containing; and

n is an integer from 0 to 5.

19. (Original) The golf ball of claim 18, wherein the intermediate layer is a water vapor barrier layer having a thickness of from about 0.1 μm to about 75 μm.

20. (Original) The golf ball of claim 18, wherein the monodisperse heterotelechelic polymer has a polydispersity of between about 1.0 and about 1.1.

21. (Original) The golf ball of claim 18, wherein the core has an outer diameter of no greater than about 1.62 inches.

22. (Original) The golf ball of claim 18, wherein the intermediate layer is an inner cover layer having a hardness of between about 40 and about 75 Shore D; and the cover is an outer cover layer having a hardness of between about 30 and about 60 Shore D.

23. (Original) The golf ball of claim 22, wherein the inner cover layer has a flexural modulus of between about 30,000 and about 80,000 psi and the cover has a flexural modulus of between about 10,000 and about 30,000 psi.